M-2013-2382394

COUNTY OF NORTHAMPTON

DEPARTMENT OF PUBLIC WORKS

NORTHAMPTON COUNTY COURTHOUSE
669 WASHINGTON STREET
EASTON, PENNSYLVANIA 18042-7465
Phone (610) 559-3197
Fax (610) 559-3210
sdesalva@northamptoncounty.org

Steven W. DeSalva, P.E.
Director of Public Works

August 14, 2013

George M. Steiner, PE, Civil Engineer Consultant
PA Public Utility Commission
Bureau of Technical Utility Services
Transportation Division-Rail Safety Section
P.O. Box 3265
Harrisburg, PA 17105-3265

RE: Closure of Northampton County Bridge 168-Hill Road Bridge over Norfolk Southern Railway and Lehigh Canal, (DOT#951523E), Glendon Borough, Northampton County

Dear Mr. Steiner:

On June 12, 2013, PennDOT officials notified County bridge officials that the PennDOT bridge inspector directed that the then closed Bridge No. 168 referenced above was to stay closed until such time that an agreed upon repair be completed of said bridge. The closure of this bridge was due to the discovery of structural deficiencies rendering the bridge unsafe for vehicular and pedestrian use.

More specifically, closure of this bridge was based on the June 12, 2013 bridge safety inspection which discovered severe corrosion holes at the ends of several steel stringers under the roadway deck. The inspection also identified severe corrosion with full section loss to several components of the floor beams supporting the bridge sidewalk. Attached are the following documents for your reference related to this matter:

1) June 12, 2013 e-mail from the bridge safety inspection consultant providing notification of the critical deficiencies at the deck stringers and sidewalk floor beams, including photographic documentation.
2) June 13, 2013 e-mail from the bridge safety inspection consultant with attachments providing photographic documentation of the bridge closure.
3) Bridge Posting Recommendation Data Form signed by the bridge safety inspection consultant recommending that the bridge be closed with a confirming signature from the PennDOT District 5-0 Bridge Engineer.

There is currently no funding budgeted for the repairs to this bridge structure. The County recommends that the bridge remain closed indefinitely, until the County assesses the economic feasibility of repairing this structure.

If you have any questions, please do not hesitate to contact me.

Sincerely,

Steven DeSalva, P.E.
Northampton County Director of Public Works

xc: John Stoffa, County Executive
Thomas Kohler, Northampton County Bridge Superintendent
Stanley Poplawski, PennDOT District 5-0 Local Bridge Inspection Coordinator
Rodney Rehnert, PennDOT District 5-0 Grade Crossing Engineer
Kenneth McClain, Borton-Lawson, Lehigh Valley Area Manager
Carl McGloughlin, P.E., Borton-Lawson Transportation Project Manager

Carl T. McGloughlin

From: Michael Newman [MNewman@saiengr.com]
Sent: Thursday, June 13, 2013 2:35 PM
To: Ashar, Kamlesh
Cc: Poplawski, Stanley; Viola, David G; vkoenigkra@pa.gov; John Rautzahn; Jonathan R. Peters; Carl T. McGloughlin
Subject: Priorty 0 and 1 Maintenance Items - 48 7406 0000 9168, Northampton Bridge 168
Attachments: 48740600009168StringersFAB_061213.pdf; 48740600009168SWStringerFAB_061213.pdf; 48740600009168SWSupportL5_061213.pdf; 48740600009168BarrierUndermine_061213.pdf

Kamlesh,

This email is the documentation of Priority "0" and "1" maintenance items for the subject bridge. The bridge was inspected June 12, 2013. The bridge and sidewalk were subsequently closed due to section loss at stringer webs at abutment bearings and section loss to sidewalk supports.

Subject Bridge: BMS# 48 7406 0000 9168; BrKey 28923
Northampton County Bridge 168
High Street/Hill Rd over NSRR & Lehigh Canal
Northampton County
SAI Bridge # 5-22

The following maintenance activities have been identified as **CRITICAL (Priority Code IM05 = 0):**

1. 25-A744602 Repair Steel Beams
   Location: FAB
   Quantity: 4 critical locations at FAB, 1 critical location at NAB, 3 non-critical locations at Flbms 5 & 6 (8 EA total)
   Description: 100% section loss to webs due to rust deterioration at steel stringer webs at bearings. See attached photos.

2. 50-B744602 Repair Steel Floorbeams/Sidewalk Support
   Location: Cantilever supports at right side of bridge at each floorbeam
   Quantity: 6 EA
   Description: 100% section loss to 1 of 2 angles that form the top and bottom chords of the cantilever support and 100% section loss to lacing bars. See attached photos.

The following maintenance activity has been identified as **HIGH PRIORITY (Priority Code IM05 = 1):**

1. 7-RLGBRPR Repair Bridge Barrier
   Location: Far Right approach span
   Quantity: 30 LF
   Description: Concrete encasement at the far right approach (kicker) span fascia beam has spalled away. The barrier is undermined and material under the barrier is loose. The barrier overhangs a gas line. See attached photos.

These maintenance items are uploaded to BMS2 and have a status (IM07) of "0 – Work not planned". If the status should be changed due to closure of the bridge, please let me know.

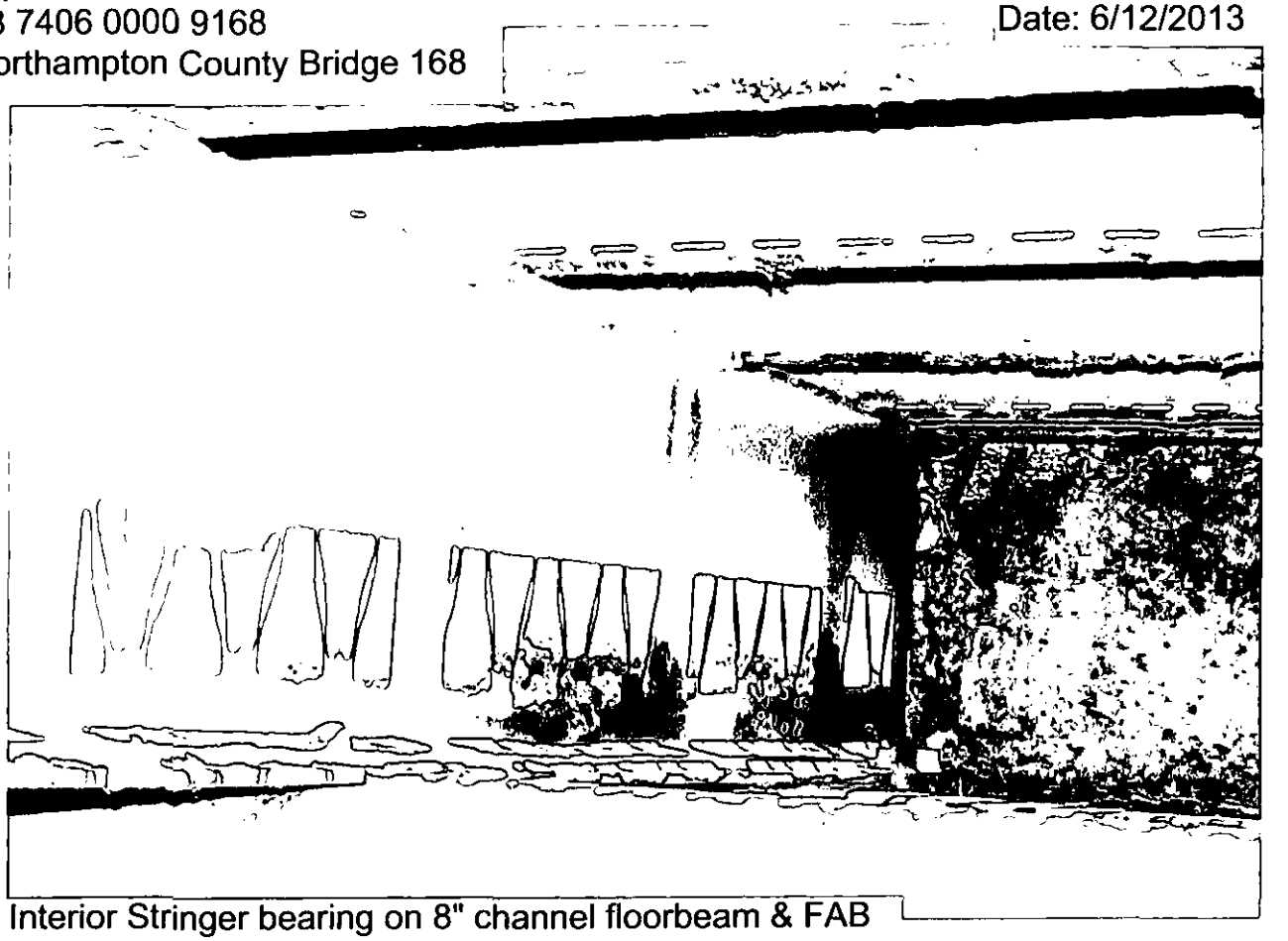
Please call or reply if you have any questions or want to discuss these issues further.

Thank you,
Mike

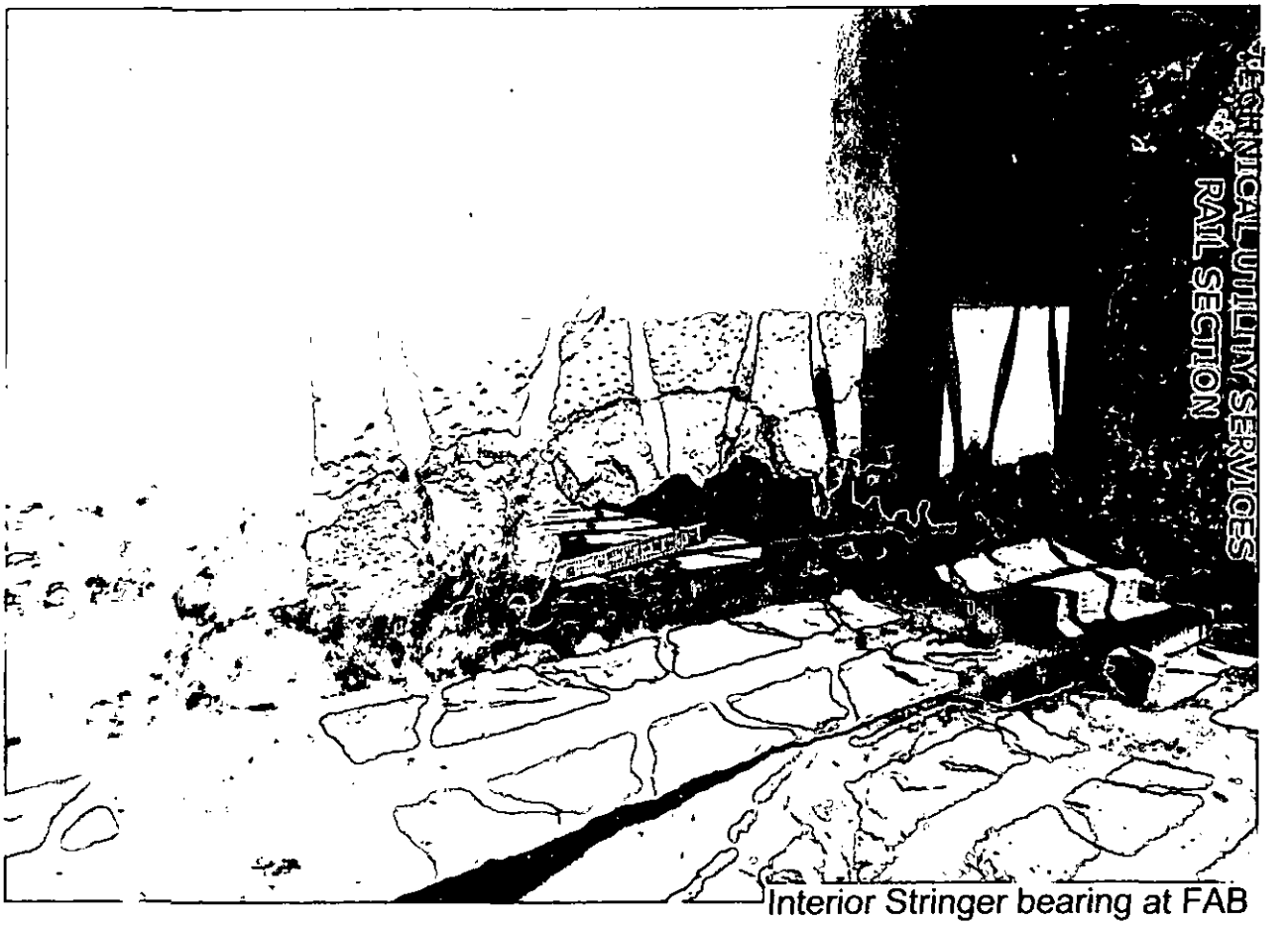
Michael D. Newman, P.E.
Project Engineer
SAI Consulting Engineers, Inc.
20 Erford Road, Suite 110
Lemoyne, PA 17043-1163
Voice: 717.763.5001
Field Cell: 717.576.9125
Fax: 717.763.0920
mnewman@saiengr.com

48 7406 0000 9168
Northampton County Bridge 168

Date: 6/12/2013



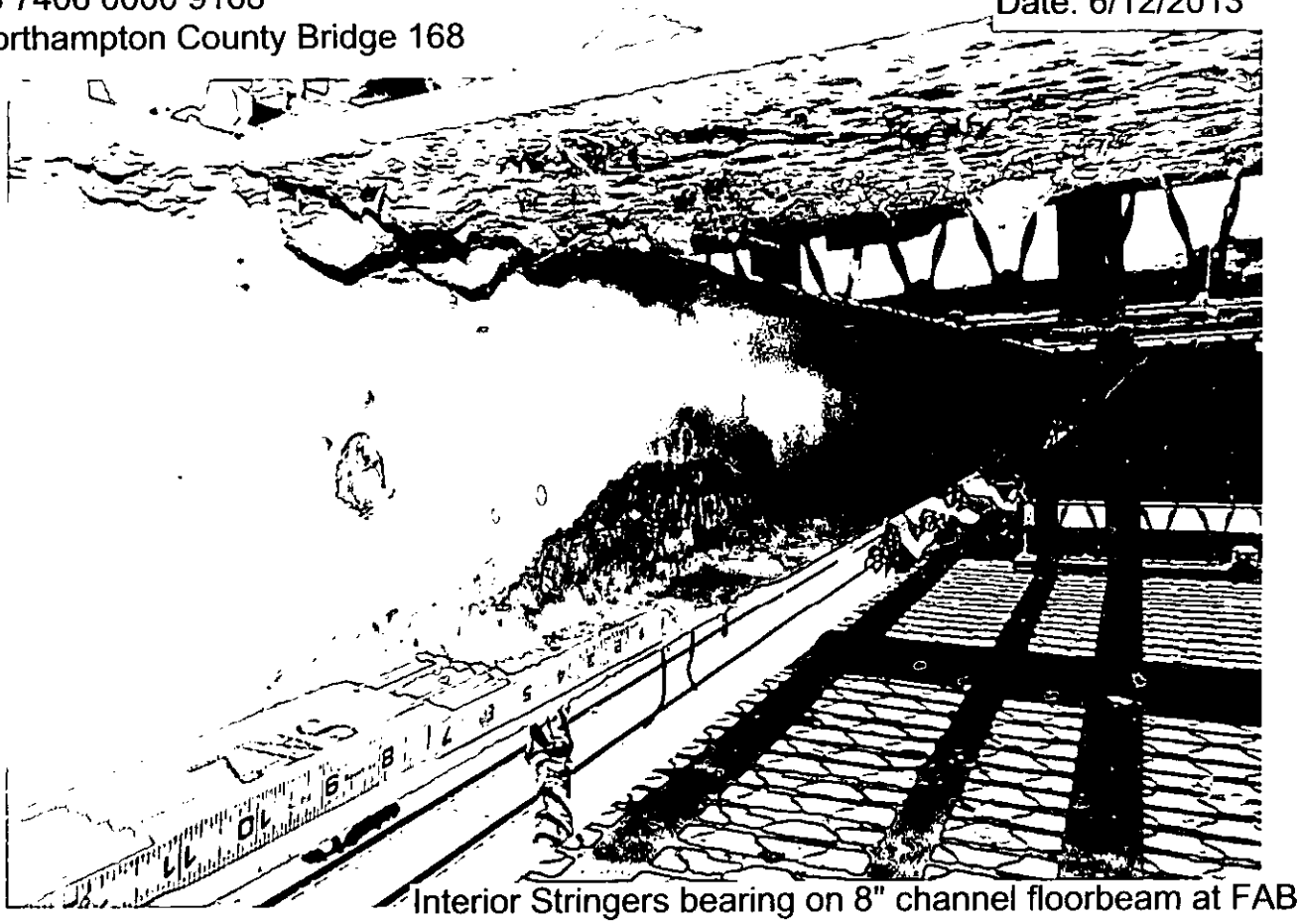
Interior Stringer bearing on 8" channel floorbeam & FAB



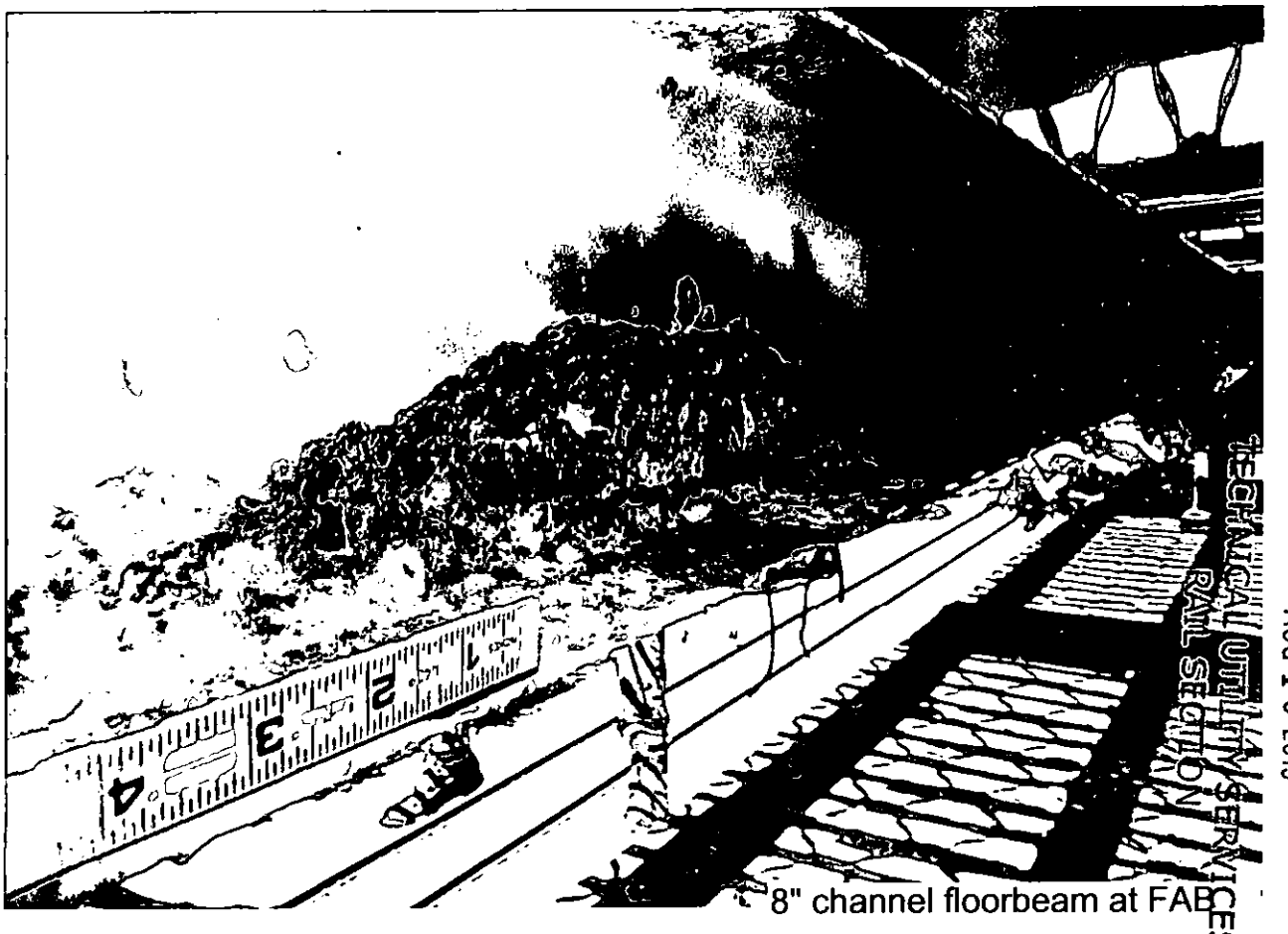
Interior Stringer bearing at FAB

48 7406 0000 9168
Northampton County Bridge 168

Date: 6/12/2013



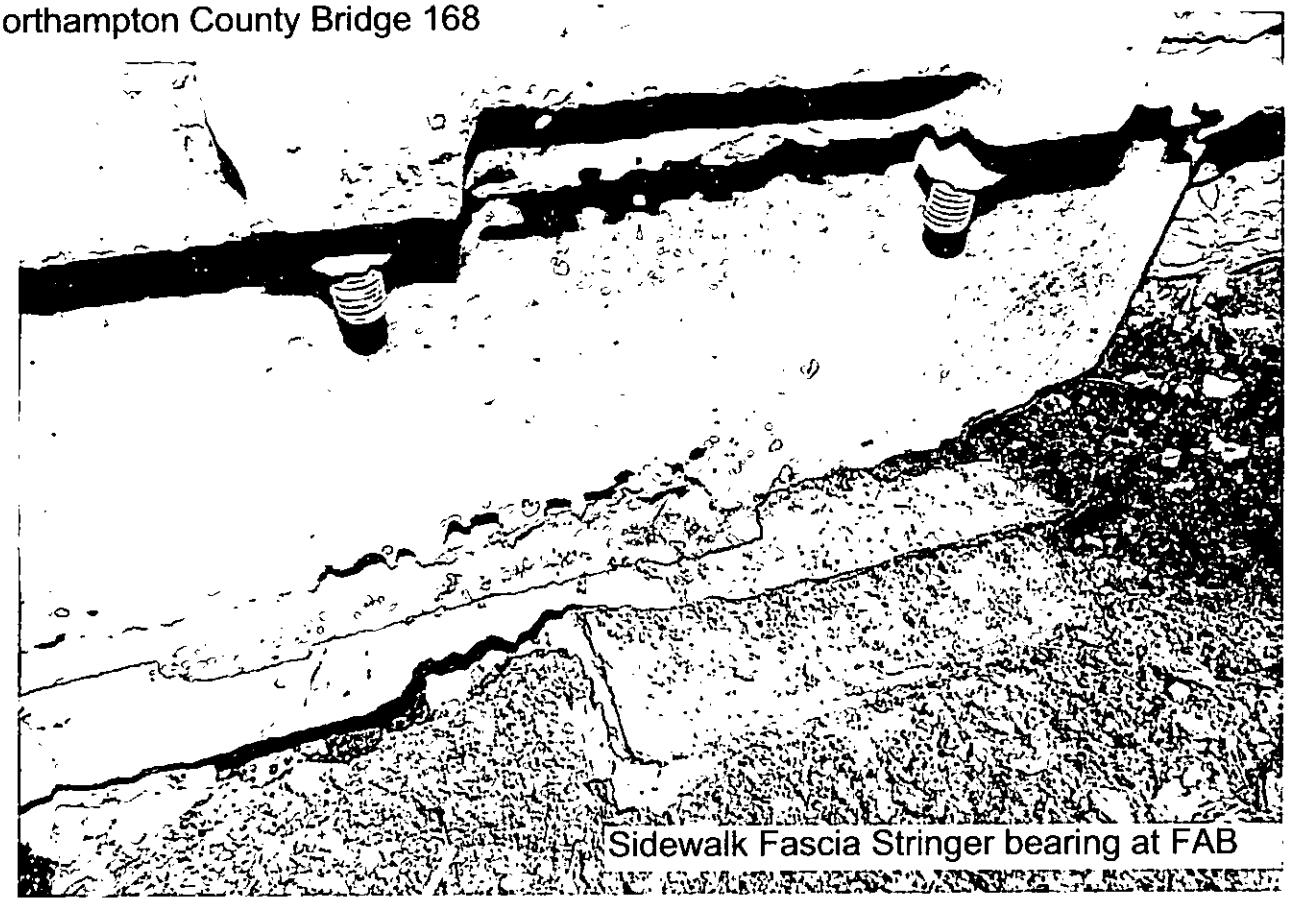
Interior Stringers bearing on 8" channel floorbeam at FAB

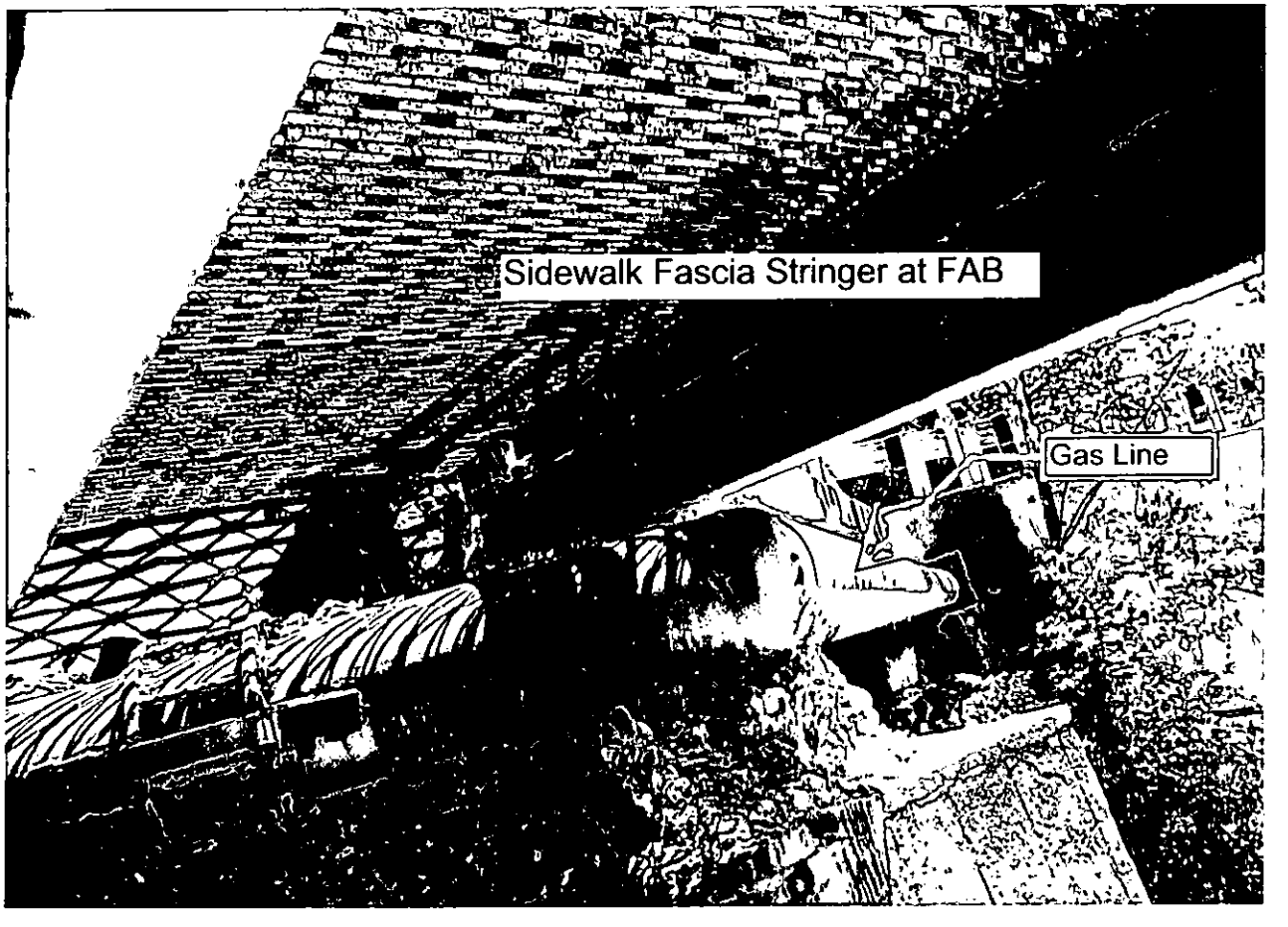


8" channel floorbeam at FAB

48 7406 0000 9168
Northampton County Bridge 168

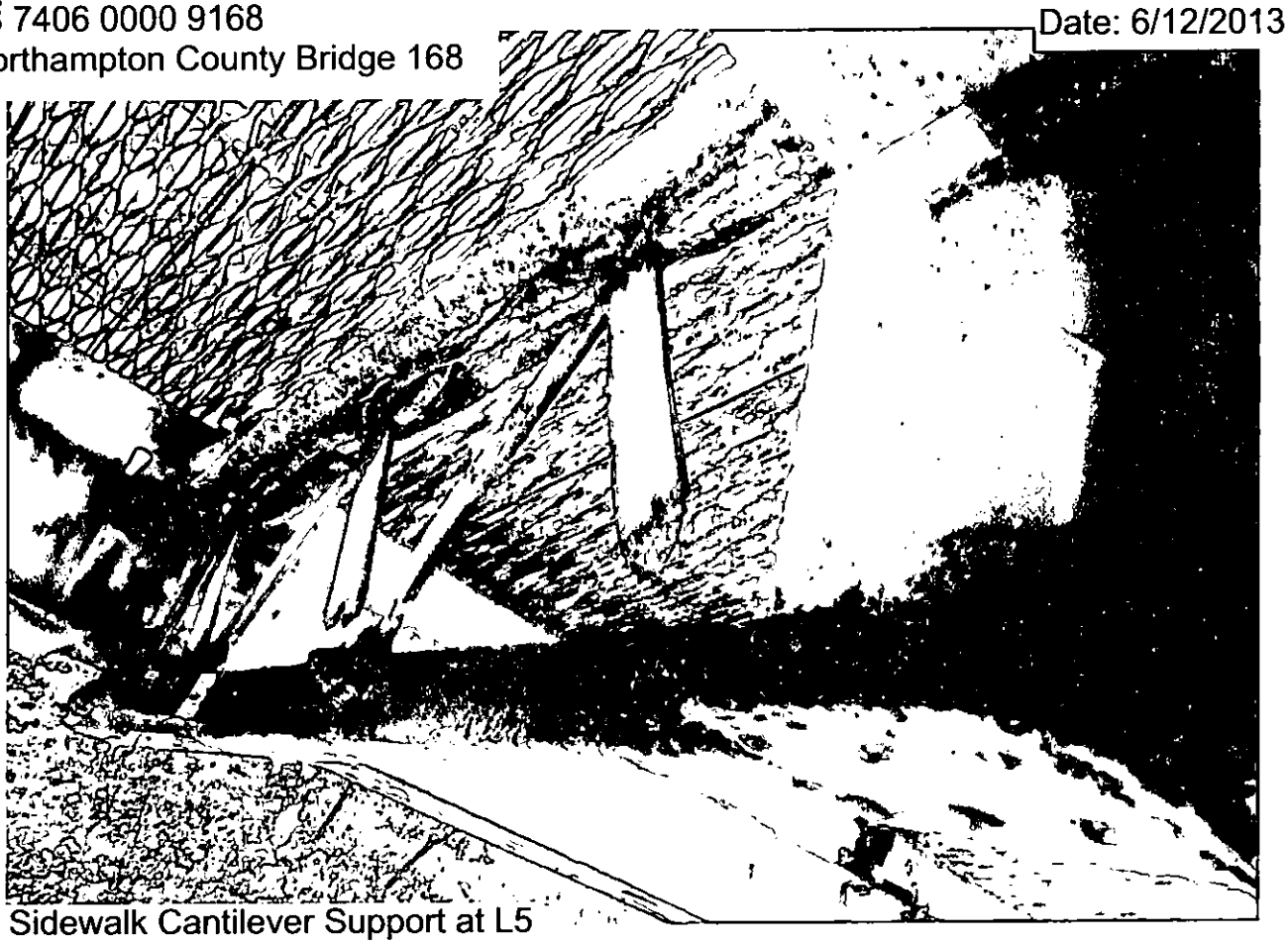
Date: 6/12/2013



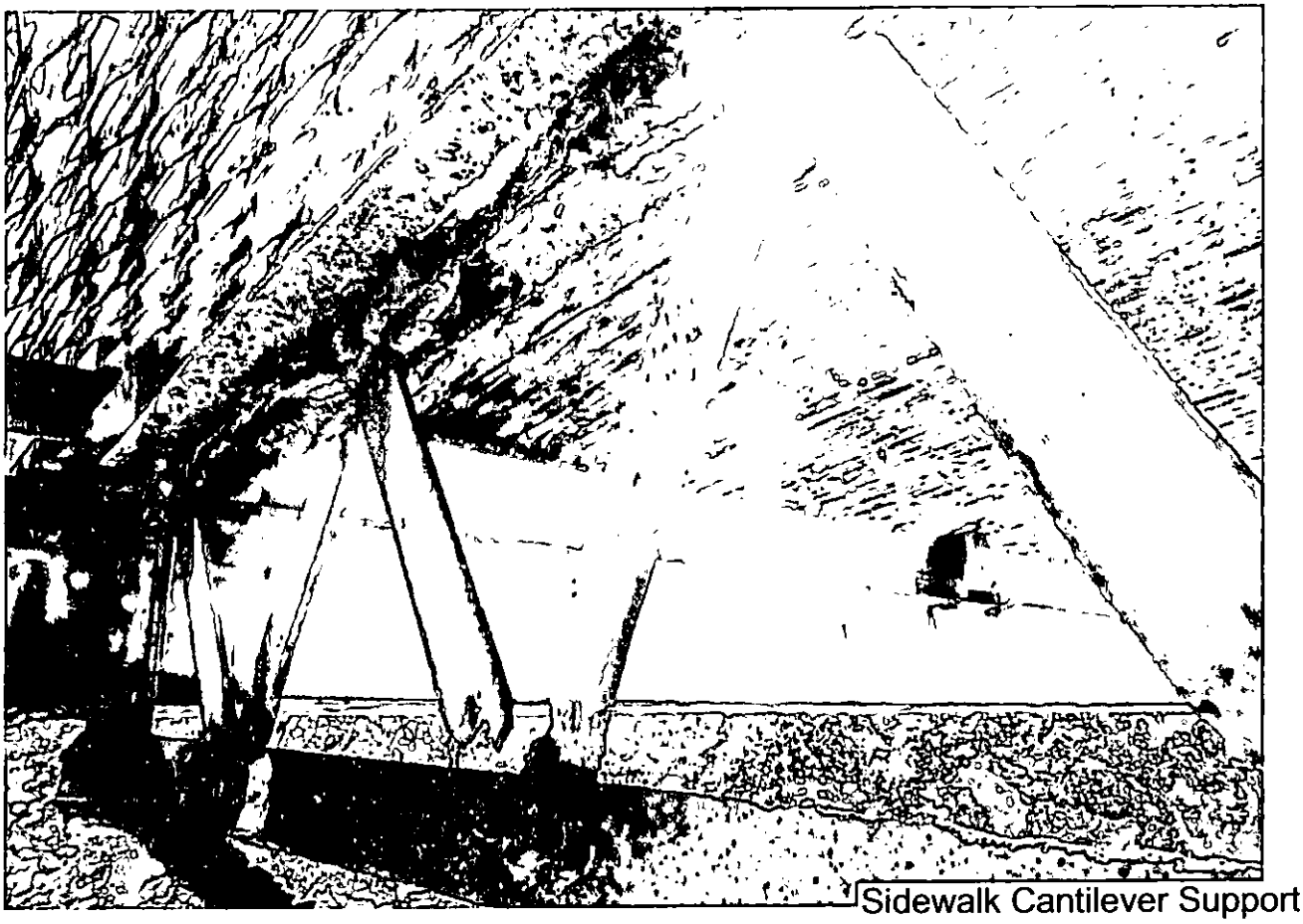


48 7406 0000 9168
Northampton County Bridge 168

Date: 6/12/2013



Sidewalk Cantilever Support at L5



Sidewalk Cantilever Support at L5

Carl T. McGloughlin

From: Michael Newman [MNewman@saiengr.com]
Sent: Thursday, June 13, 2013 8:58 AM
To: Poplawski, Stanley; 'Steven Desalva'
Cc: Carl T. McGloughlin; John Rautzahn; Myers, Nevin L.; Lansing, William J; Ashar, Kamlesh; Jonathan R. Peters
Subject: RE: BMS 48-7406-0000-9168 High Street over Lehigh Canal/NS RR
Attachments: 48740600009168BrClosedSigns_061213r.pdf; 48740600009168StringersFAB_061213.pdf; 48740600009168SWSupportL5_061213.pdf; 48740600009168SWStringerFAB_061213.pdf; 48740600009168StringerWebsAt FLBM6&5_061213.pdf; 48740600009168Stringer1@NAB_061213.pdf

Stan,
Attached is photo documentation for yesterday's bridge and sidewalk closure. Please let me know if you need us to prepare a Bridge Problem Report or if the necessary information was compiled after our phone discussions yesterday. I will forward the Bridge Posting Recommendation Data Form and Maintenance Activity Priority information soon.

Please reply or call if you have any questions.

Michael D. Newman, P.E.
SAI Consulting Engineers, Inc.
717-763-5001

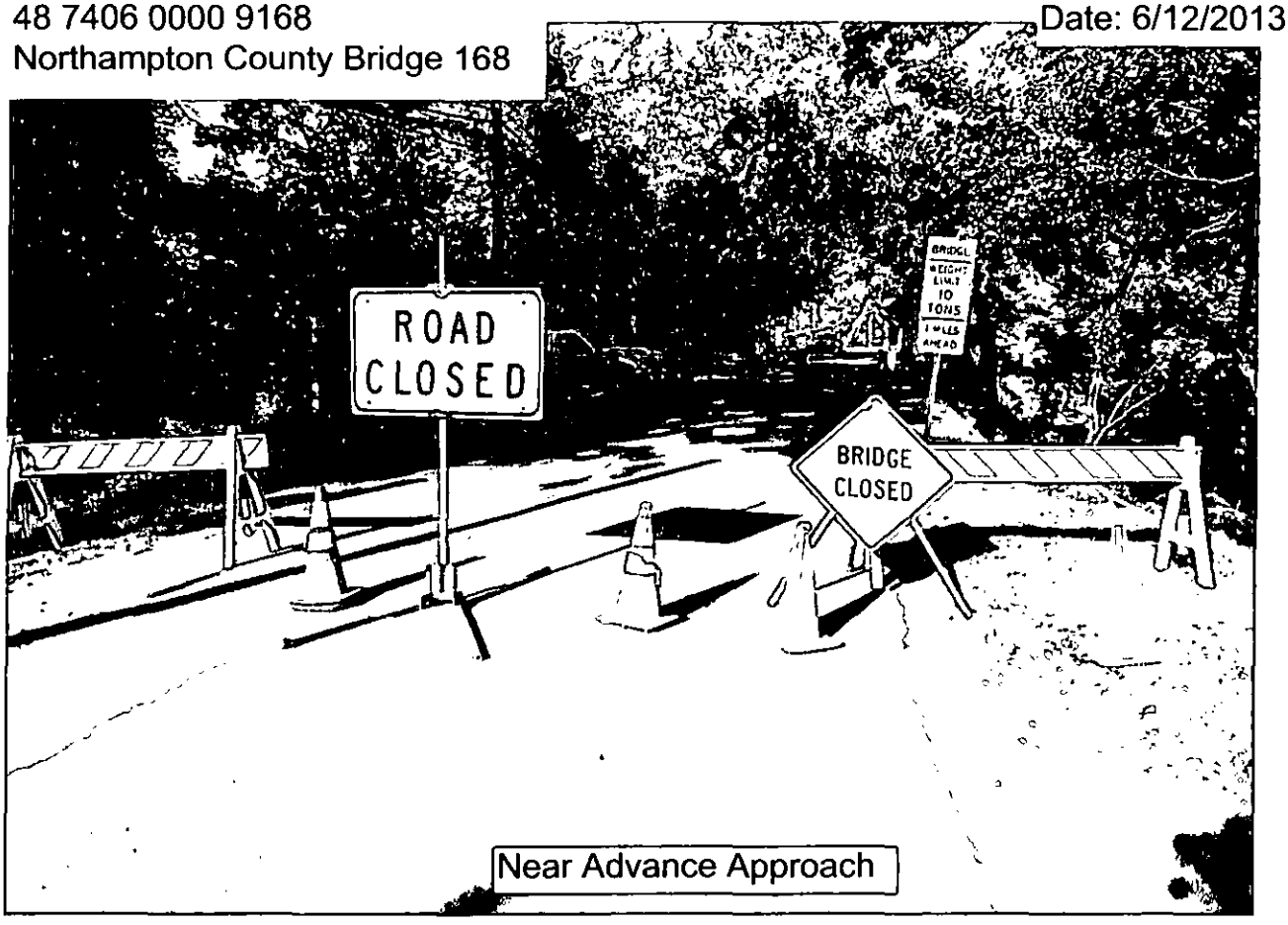
From: Poplawski, Stanley [mailto:SPOPLAWSKI@pa.gov]
Sent: Wednesday, June 12, 2013 4:47 PM
To: 'Steven Desalva'
Cc: 'Tom Kohler'; Carl T. McGloughlin; John Rautzahn; Michael Newman; Myers, Nevin L.; Lansing, William J; Kufro, Christopher; Ashar, Kamlesh
Subject: BMS 48-7406-0000-9168 High Street over Lehigh Canal/NS RR

Steve,
Our Central Office oversees a contract for inspection of state and local bridges over Norfolk Southern railroad. During an inspection today by SAI, critical deficiencies were found at the subject bridge.
Since this bridge was closed during the inspection, it must remain closed until repairs or reinforcements can be constructed.
As per PennDOT Pub 100A this is considered to be a ***"Priority 0" maintenance item, requiring that the work is to be completed within 7 days.***
We have not been able to reach Tom Kohler at this time, but as per your call, we understand that your personnel can install bridge closure signs and devices today, and our bridge inspectors will remain at the bridge until your people arrive.
You can reach Kamlesh at cell# 484-632-6188 if necessary.
Thanks,

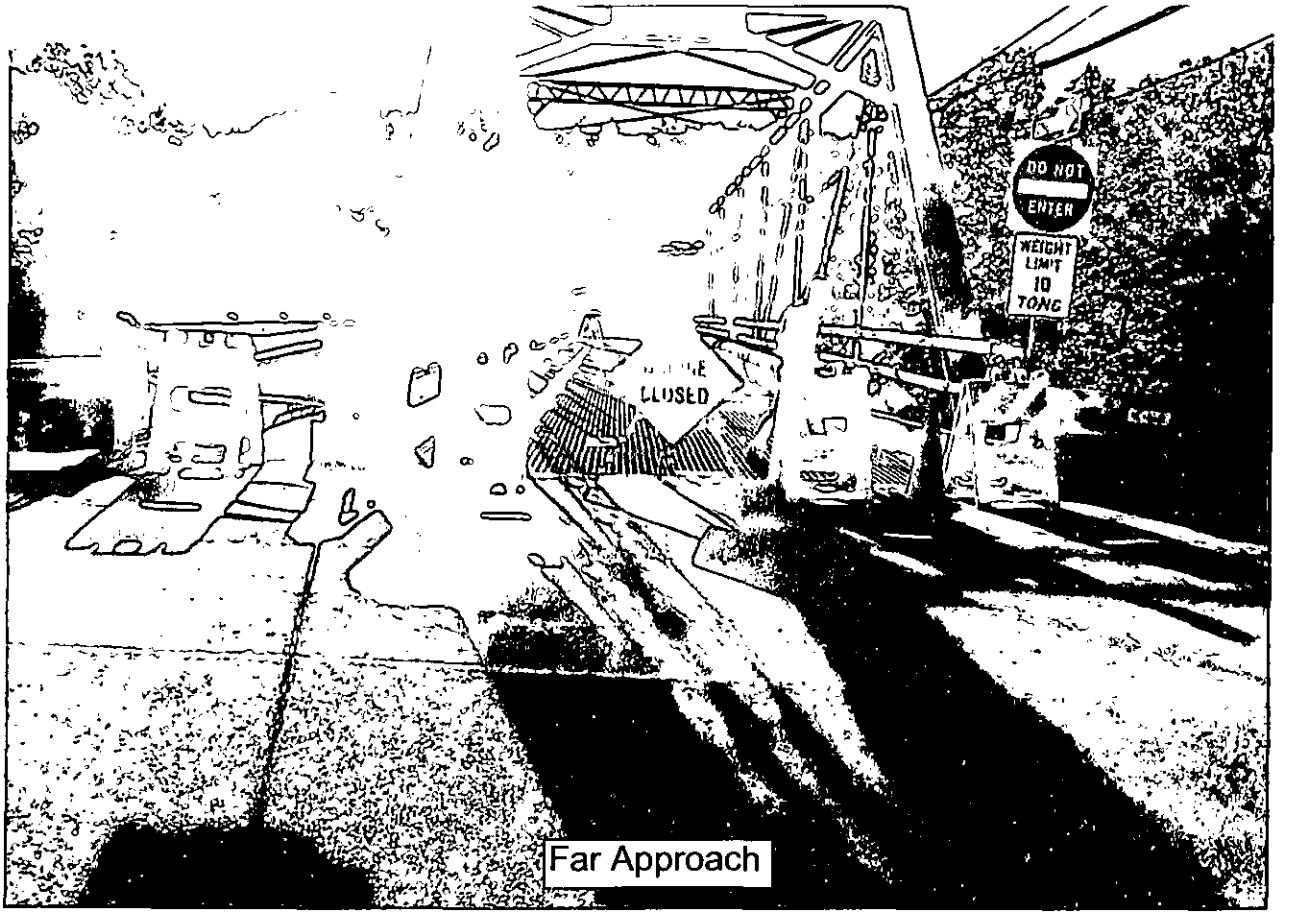
Stanley J. Poplawski | Local Bridge Inspection Coordinator
PA Department of Transportation | Engineering District 5-0
1002 Hamilton Street | Allentown, PA 18101
Phone: 610.871.4592 | Fax: 610.871.4122
www.dot.state.pa.us

48 7406 0000 9168
Northampton County Bridge 168

Date: 6/12/2013



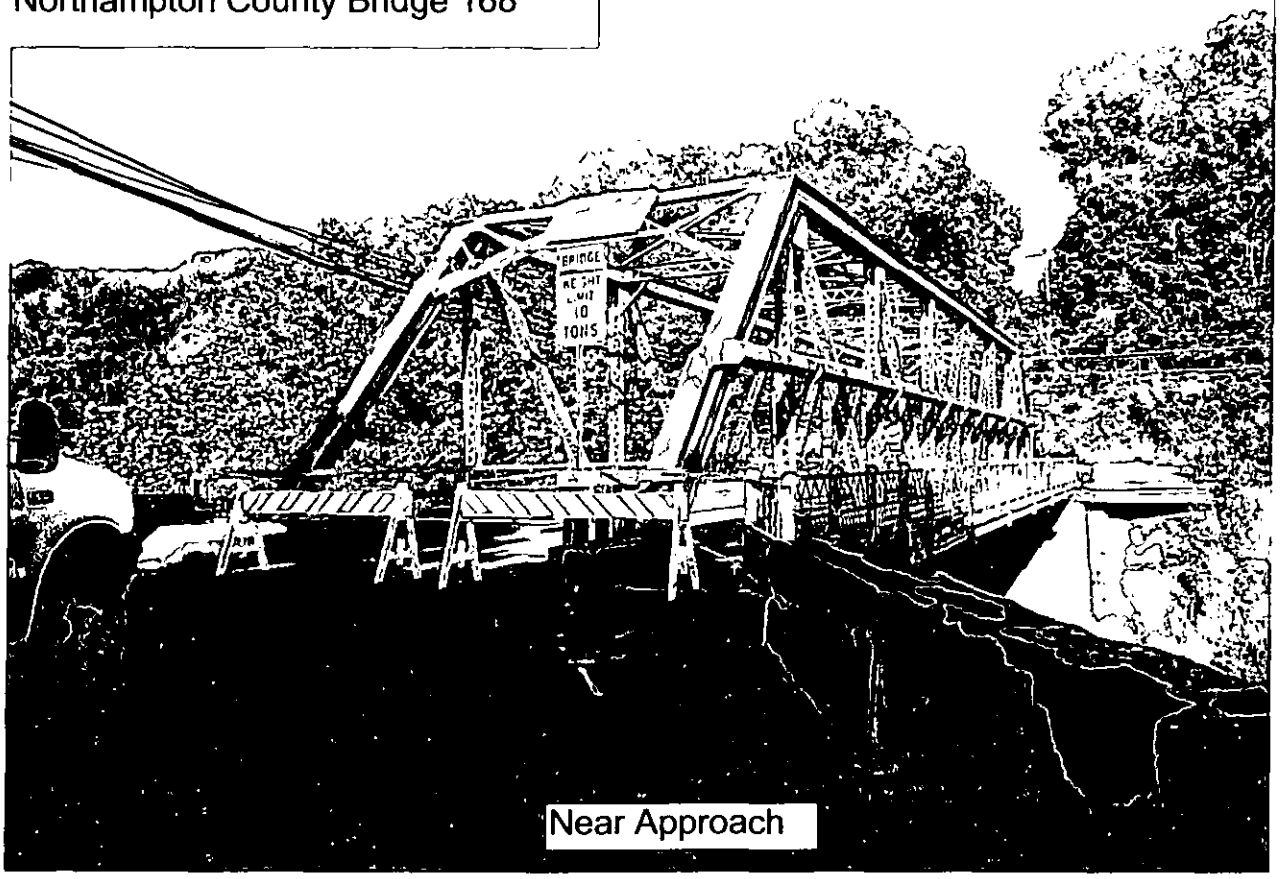
Near Advance Approach



Far Approach

48 7406 0000 9168
Northampton County Bridge 168

Date: 6/12/2013



Near Approach

APPENDIX IP – 04A
BRIDGE POSTING RECOMMENDATION DATA

June 2001
Rev May 2008

BMS # 48 - 7406 - 0000 - 9168 BMS reference No. BRKEY 28923

LOCATION

County Northampton Municipality Glendon Borough / Easton City

State Route 7406 Segment 0000 Offset 9168 Traffic Route(s) _____

Bridge Name: Northampton Bridge No. 168 Detour Length 1.1 miles

Feature Carried High Street / Hill Road NHS No

Feature Intersected Norfolk Southern Railroad, Lehigh Canal PUC Jurisdiction _____

ADT 80 ADTT 0 School Bus Route _____ Public Transportation Route _____

PREVIOUS BRIDGE POSTING (Year last posted 2004)

Weight Limit 10 Tons Except Combinations N/A Tons One Truck at a Time N/A

RECOMMENDED POSTING

Weight Limit N/A Tons Except Combinations N/A Tons One Truck at a Time N/A

Bridge Closed; X Yes ____ No Bridge Closed, Pedestrian Traffic Only Allowed; ____ Yes X No

Posting based on: Structural Analysis _____ and/or Structural Condition X

Controlling Member(s) Stringer 3 at FAB, Sidewalk support brackets 3, 5 & 6

Reason (as per Pub 238, Section IP 4.3.1.1) The restriction is necessary because main bridge members are deteriorated and cannot carry live loads safely (holes in webs of stringers, 100% swalk bracket sxn loss).

STRUCTURE DATA

Structure Type: Main 16118 – steel thru truss Approach 16104- Encased I-beams

No. Spans 1 Structure Length 137 ft. and if applicable: Depth of Fill: N/A ft.

Bridge Roadway Width 15.6 ft. No. of Traffic Lanes 1 Sidewalk: 0' Lt. 7' Rt.

Year Built: 1910 Year Last Reconstructed/Rehab. 1949 Type Reconst. unknown

BRIDGE CONDITION RATINGS

Date of Last Inspection 6/29/2012 Sufficiency Rating 32.6 (before posting)

APPENDIX IP – 04A
BRIDGE POSTING RECOMMENDATION DATA

June 2001
Rev May 2008

Deck 5 Superstructure 2 Substructure 4 Culvert N/A

Deck Geometry Appraisal 7 Approach Alignment Appraisal 7

Comments _____

BRIDGE RATING ANALYSIS

Governing Members(s) Bot Chord L3-L4 (int./fascia) Governing Span(s) 1

Non-Redundant _____ Fatigue Sensitive _____ Interior/Fascia Girder _____(if multi-girder)

Inventory Ratings:	Full Lanes:H	5 Tons	HS	9 Tons	ML80	9 Tons	TK527	9 Tons
	One Truck:H	____ Tons	HS	____ Tons	ML80	____ Tons	TK527	____ Tons
Operating Ratings:	Full Lanes:H	31 Tons	HS	52 Tons	ML80	50 Tons	TK527	51 Tons
	One Truck:H	____ Tons	HS	____ Tons	ML80	____ Tons	TK527	____ Tons

Analysis Method: X AASHTO Line Girder with Simplified (S-Over) LL Distribution Factors

____AASHTO Line Girder with NCHRP LL Distribution Factors

____2D/Grillage (_____) describe ____3D/FEM (_____) describe

____PDT Box Culvert Analysis Program ____Other (_____) describe

Rating Method: X Working Stress ____Load Factor ____Load & Resistance Factor Design

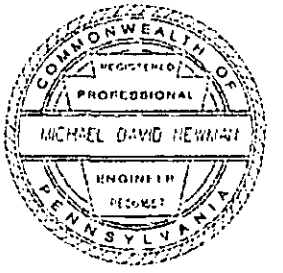
____Engineering Judgment ____Other (_____) describe

Special assumptions used for analysis: N/A

Controlling member conditions:(i.e., % deterioration, etc.) Holes in Stringer webs*
*Condition found subsequent to above bridge rating analysis

Are traffic conditions for One Truck at a Time restriction valid according to Pub. 238? ____Yes ____No
(District Traffic Engineer Signoff Required, see Page 3 of 3)

PROFESSIONAL ENGINEER'S SEAL
The data and information on pages 1 and 2 has been tabulated as part of a structure safety inspection study by **SAI Consulting Engineers, Inc.**
Date: 6/14/2013



APPENDIX IP – 04A
BRIDGE POSTING RECOMMENDATION DATA

June 2001
Rev May 2008

PROGRAMMING DATA

MPMS_____ Scope of Work: ____Replace ____Rehab ____Repair

Program: ____12 Year Program ____I4R ____Betterment ____Department Force

Programming Status: ____On Bridge Bill ____Twelve Year Program (____Four Year Period)

Cost ($000)_____ Estimated Letting Date_____

ECONOMIC IMPACT OF RECOMMENDED POSTING

Will recommended posting adversely impact Industry/Business? ____Yes ____No

If yes, provide brief description. _____

_____

_____

IMPACT OF RECOMMENDED POSTING ON EMERGENCY SERVICES, ETC.

Provide brief description of impact on each public service

Snow Removal _____

_____

Ambulance _____

_____

Fire Truck _____

_____

Public Transportation _____

_____

The local bridge owner (municipality), _____.
Has researched and documented the information tabulated on this sheet

Signature of Municipal representative:_____.

Date: _____

DISTRICT BRIDGE ENGINEER QC REVIEW

This bridge posting recommendation has been developed and accepted by the District and is accurate to the best of my knowledge.

Signed: _____

Name: CHRISTOPHER J. KUHR
Title: District Bridge Engineer

Date: 6-19-13

Required if "Bridge Limited To One Truck" posting is proposed

Signed: _____

Name: _____
Title: District Traffic Engineer

Date: _____